

WAISTLESS UNDERWEAR ALTERNATIVE SECRET PANTS SHIELD

RELATED APPLICATIONS

5 This application is based upon provisional patent application Serial No. 60/459,462 of April 1, 2003, and claims benefit under 35 USC 119(e). This application is also based in part upon application serial no. 10/741,176 of December 20, 2003, which is a continuation of application serial no. 10/202,350 of 10 July 24, 2002, now U.S. Patent No. 6,681,407B2.

FIELD OF THE INVENTION

 The present invention relates to disposable waistless and 15 seamless underwear for women.

BACKGROUND OF THE INVENTION

 Conventional women's panty underwear with waistbands and 20 seams around the leg openings is unsuitable for women who wear tight pants, or low waist pants (such as "hip huggers"), which openly reveal waist bands and seams of panty underwear, or expose underwear waist bands.

 Moreover, for women who like to wear jeans without underwear 25 there is a natural fear of bacterial infection or exposure of sensitive body tissues to clothing dyes or irritating stitching.

Among related prior art patents are those which fall into four categories for which common distinguishing arguments can be composed. The categories are special garments or undergarments, absorbent materials for pads, clothing adhered pads, and
5 maternity wear.

Clothing Adhered Pads:

US Patent No. 6,162,457 of the Applicant Christine Martz herein describes small clothing adherable perfume patches which attach to the inside of clothing, such as a blouse, with a skin
10 facing side rubbing intermittently against the skin, to mute the smell of the perfume emitted by exposure to body oil in the skin of the wearer.

However, neither Martz '457 nor Williams, in US Patent No. 5,729,835, relate to a pants shield designed to permit the user
15 to comfortably wear jeans, pants or shorts or the like without an undergarment and also without any external indication that such a shield is being used. Martz '457 relates to small garment pads used to emit a fragrance; their general physical shape and construction are different from the instant invention. Williams
20 '835 relates to a panty liner of generally oblong configuration specifically for use with thong underwear. The multilayer construction designed for maximum absorption and a "penetration barrier" would be far too bulky for the objectives of the present invention.

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Maternity Wear:

Blair, in US Patent No. 5,946,730 describes an expansion panel for temporarily providing a larger waist and frontal area so that a user can wear the jeans during pregnancy. The panel is easily removable when it is no longer needed. Clearly this prior art is irrelevant to the present invention.

Absorbent Materials for pads:

Palumbo et al., in US Patent No. 6,232,250 B1 relates to an absorbent pad with defined fluid receiving and fluid retention regions. It is designed primarily for use in treating female incontinence.

Rock et al., in US Patent No. 5,344,698 describes a composite undergarment fabric of multilayer construction using a skin contact layer of hydrophilic material with superabsorbent and high moisture transmission layers attached.

Mende, in US Patent No. 5,242,632 relates to a nonwoven fabric and manufacturing method. It is a soft bulky absorbent and permeable material.

Tanner et al., in US Patent No. 6,162,961 has an absorbent article having exceptional expansion properties when wetted.

None of the above materials are required in the construction of the present invention. High moisture absorption is not a key requirement. Comfort and low thickness so as to preclude edge detection from external viewing of the outer garment are principal requirements which cannot be supported by the materials described in this group of patents.

Special Garments or Undergarments:

Glaug, in US Patent No. 6,307,120 B1 describes a cloth-like, breathable disposable brief with refastening means. It is an adult garment for controlling incontinence.

Davis, in US Patent No. 5,832,535 discloses a genital covering garment that is a minimum temporary covering generally useful for surgical procedures or examinations not requiring visual or tactile access to these regions.

Marbach, in US Patent No. 3,339,208 relates to a minimal covering for the lower part of the anatomy consisting of a spring supported patch that fits between the user's legs and engages the pubic bone and the sacrum. The intended use is as a bathing brief.

Crawford, II, in US Patent No. 5,467,482 describes a self supporting sideless and waistless tanning brief. This is a malleable wire frame with a cloth covering extending to the rear with a spring member which fits between the buttocks of the wearer.

Vargason, in US Patent No. 5,903,922 discloses a removable undergarment that is designed for quick wearing. A variety of attachment patches are used to attach the undergarment around the user in a comfortable fashion.

Lampman, in US Patent No. 4,905,323 describes a disposable undergarment held by a partially encircling belt, wherein the undergarment covers the pubic area and central buttocks of the

user. It can be used by women while trying on bathing suits or the like in stores.

The inventions in this group relate to garments or undergarments. None disclose a clothing attached secret shield
5 that can be used as a substitute to using an undergarment.

OBJECTS OF THE INVENTION

It is therefore an object of the present invention to
10 provide underwear for women which is suitable for wearing with low slung hip hugging pants and the like.

It is also an object of the present invention to provide waistless and seamless underwear for garments which utilizes a sanitary absorbent material and which prevents irritation or
15 exposure to bacteria and other pathogens.

Other objects which become apparent from the following description of the present invention.

SUMMARY OF THE INVENTION

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In keeping with these objects and others which may become apparent, the present invention is a pants shield that is invisible from the exterior and which can be used with any form-fitting attire without the use of underpants or any undergarment.

25 Since the pants shield is adherable only to the upper crotch facing area of an outer pants garment, it is unencumbered by

auxiliary supports, such as annoying skin adhering adhesives or other body supports, such as waistbands, belts, or buttocks holding supports.

Some current fashions for young women are such that they
5 render normal underpants or even thongs undesirable, but the alternative of not wearing underwear has its own disadvantages.

Constructed of a thin absorbent pad, the pants shield of the present invention is adhesively bonded temporarily during use to the crotch area of the outer garment. It can be used in jeans,
10 exercise pants, leotards, shorts, or any normal pants. This permits active use of the garment without underpants which introduce seams and hems that show through as panty lines. This secret pants shield is more comfortable than a thong and more fashionable because low cut pants often reveal the top band of
15 the thong when bending or stretching. Because of the soft shield surface in contact with vaginal area, it prevents infections that can arise from abrasion or irritation caused by rubbing against clothing materials when underpants are not worn. The shield of this invention provides a clean bacteria-free barrier from
20 garment fabric which may also contain irritating dyes. It absorbs small amounts of moisture and also provides extra protection for garments during menstruation periods without the need for an undergarment.

Therefore this secret pants shield permits sanitary wear of
25 pants without underwear providing the ultimate fashion compatibility with any pants attire. Comfort is provided by the

soft contact material. Since it is securely bonded with a temporary adhesive, it can be used for active pursuits. The disposable nature and small compact size makes it convenient to change a shield whenever it gets messy. The secret pants shields are available in different sizes such as small, medium, and large. They are also available in colors so as not to contrast with the color of pants which may be sheer or slightly transparent.

As an alternative to panties, an undergarment includes an absorbent pad over the genital area which is held in place by a light weight stretch fabric (such as lace) strap. The distal ends of the strap are attached to nonallergenic adhesive patches which adhere to the skin in front and back for attachment.

This garment can be fabricated either as a disposable or reusable panty alternative. In a disposable version, the back adhesive patch is permanently attached (as by sewing or adhesive) to the stretch fabric strap. The front patch is attached to the strap via a hook and loop attachment that facilitates detachment of the strap from the front adhesive patch without removing the adhesive patch from its skin attachment; this is primarily to accommodate toileting.

In a reusable version, the part that is washable and therefore reused is the strap which can then afford to be more substantial and decorative than that of a disposable version. In this case, both adhesive patches are removable via a hook and

loop attachment to the strap so that new adhesive patches are attached for each use. A new pad is also attached via pressure sensitive adhesive for each use. The adhesive patches in this embodiment can optionally have a decorative outer covering of
5 fragrance emitting fabric.

In an alternative embodiment, the panty alternative also uses an absorbent pad over the genital area. It is held in place inside an extremely scant panty-like garment. Since the height of the garment is too short to fit over the hips for secure
10 positioning, adhesive patches are used.

These patches can be placed on the inside of the garment to attach to the user's body, or they can be placed on the outside surface of the garment to attach to the user's outer garment if pants are worn. This embodiment can also be fabricated as a
15 reusable cotton garment with replaceable adhesive patches and pad, or it can be fabricated as a disposable of cotton fabric, woven or non-woven synthetic fabric, or even paper.

BRIEF DESCRIPTION OF THE DRAWINGS

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The present invention can best be understood in connection with the accompanying drawings. It is noted that the invention is not limited to the precise embodiments shown in drawings, in which:

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Figure 1 is a partial perspective view of a reclining woman

wearing form-fitting jeans;

Figure 2 is a top view of a secret pants shield of this invention;

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Figure 3 is an perspective exploded view of the pants shield of Figure 2;

Figure 4 is a perspective exploded view of a different embodiment of a pants shield;

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Figure 5 is a top plan view of an inner side of a panty alternative of this invention;

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Figure 6 is a top plan view of an outer side of the panty alternative as in Figure 5;

Figure 7 is a front elevational view detail of a model wearing the panty alternative as in Figure 5;

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Figure 8 is a rear view detail of the model wearing the panty alternative as in Figure 5;

Figure 9 is a perspective view of an alternative embodiment of the panty alternative using adhesive patches on an outer surface; and,

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Figure 10 is a perspective view of a further alternative embodiment using adhesive patches on an inner surface.

5 DETAILED DESCRIPTION OF THE INVENTION

Figure 1 shows a detail of a reclining woman 1 wearing an ensemble which derives maximum benefit from the secret pants shield of this invention. Several features of the style conspire
10 to make the use of underwear undesirable. Jeans 2 are tight and form-fitting with low hip-hugging waist band 5. The short top 4 leaves a bare abdominal midriff 3. This exposed central area is antithetical to underwear waistbands. The site of the secret pants shield of this invention is crotch area 6 which is not
15 disturbed by any indication of the shield within.

Figure 2 shows pants shield pad 10 with circumferentially extending bonded edge 11 and bottom adhesive areas 12. While Figure 2 shows two bottom adhesive areas, one or more adhesive areas can be employed to adhere pants shield pad 10 to an inside
20 crotch facing portion of a pants garment.

The exploded view of Figure 3 reveals the construction with top layer 15, adhesive ring 11 around bottom layer 16, adhesive areas 12 and release liners 12a which cover adhesive patches 12 until use. The top layer 15 is a soft absorbent paper material
25 such as soft paper towel. The bottom layer 16 can be identical material. Adhesive ring 11 bonds layers 15 and 16 permanently.

Adhesive 12 is a temporary adhesive analogous to that used on feminine hygiene panty liner pads. An alternate construction of a single layer equivalent to the two layers of soft paper towel can also be used. Moreover, one or more adhesive layers 12 can
5 be employed to attach pants shield pad 20 to a crotch facing area of pants garment.

A prototype for one embodiment for a secret pants shield has been constructed and tested successfully. Layers 15 and 16 were cut out of KLEENEX® VIVA® paper towel, and the adhesive areas
10 12 were double width lengths of 3/4" wide SCOTCH® Poster Tape from 3M Company.

Figure 4 shows the construction of alternate embodiment 20 of the secret panty shield of this invention. It includes at least three surface bonded layers with adhesive patches on the
15 bottom layer. Top layer 21 is a thin permeable nonwoven fabric material, such as of a paper or a synthetic plastic material. However, top layer 21 may also be a woven material. Middle layer 22 is a thin absorbent non-woven or woven material, and bottom layer 23 is a thin impermeable layer, such as of paper or of a
20 synthetic plastic. Adhesive patches 12 with release liners 12a complete shield 20. The construction and materials of the various layers are similar to those of a light weight bed pad.

The bottom layers 16 or 23 adjacent to the transparent temporary adhesive patches 12 can be selected in a variety of
25 colors to minimize contrast with pants material.

Total thickness of the secret pants shield must be kept to a

minimum to prevent a visible outline from showing through. For context, it is well to know that panty seams range from a thickness of about 0.08" (2mm) to about 0.12" (3mm) and are quite visible under tight pants. A LIGHTDAYS™ feminine hygiene pad

5 from KOTEX® is 0.075" (1.9mm). The thickness of the preferred embodiment of secret pants shield as in Figure 3 (with two layers) is about 0.030" (0.76 mm). The thickness of the second embodiment as in Figure 4 (with three layers) is 0.025" (0.64mm).

The secret pants shield of this invention is therefore
10 preferably less than 1 mm thick, which is not visible externally.

Figure 5 shows the inner surface of panty alternative 30 of an alternate embodiment.

Figure 6 shows the outer surface, while Figures 7 and 8 show the front and back view respectively of a model wearing panty
15 alternative 30. Panty alternative 30 includes stretch fabric strap 31, absorbent pad 34 and adhesive patches 32 for the front and 33 for the back.

In use, adhesive patches 32 and 33 are attached to the user's skin as shown in the model 45 details of Figures 7 and 8.

20 The underside of patch 32 and 33 has a nonallergenic adhesive covered by release liner 36 which is removed prior to attachment.

Since a disposable version is shown in Figures 5 and 6, rear patch 33 is permanently attached to strap 31 by stitching 37 or adhesive. Front patch 32 has a small area of loop material 40
25 which engages a corresponding area of hook material which is adhesively attached (or stitched) to strap 31. This facilitates

removal of the garment for toileting purposes with easy reattachment without removal of the adhesive from the skin. The decorative top covering of adhesive patches 32 and 33 can optionally be an outer fragrance emitting layer. Absorbent pad 34 is attached to strap 31 by adhesive patch 35.

Pad 34 can be a light cotton panel or a paper product similar to a sanitary pad. For a version where strap 31 is reusable and washable, old pad 34 is replaced with each use as are adhesive attachment pads 32 and 33. For a reusable version, patch 33 would be attached to strap 31 in the same manner as shown in figure 6 for patch 32.

In an alternate embodiment, absorbent pad 55 is adhesively attached to a panty-like garment 51 as shown in Figures 9 and 10. Waist band 52 is much wider than that of normal panties since it fits around the wide part of the hip (not at the waist). Height h is much lower than normal panties. Leg holes 56 complete the configuration.

If the user is wearing pants, she may use version 50 (Figure 9) with adhesive patches 54 attached to the outside surface of garment 51. In this case, garment 51 would be secured to the outer garment (pants).

Alternatively, version 60 (Figure 10) may be worn with any type of outer garment wherein adhesive patches 64 are inward facing to attach to the user's skin. A single garment 51 can be supplied with four adhesive patches (or fewer) each with adhesive and release liners on both surfaces. In this manner, the patches

can be attached to either the inner surface of garment 51 (Figure 10) or to the outer surface (Figure 9) as desired. Disposable or reusable versions can be fabricated as described in the summary.

In the foregoing description, certain terms and visual
5 depictions are used to illustrate the preferred embodiment.
However, no unnecessary limitations are to be construed by the terms used or illustrations depicted, beyond what is shown in the prior art, since the terms and illustrations are exemplary only, and are not meant to limit the scope of the present invention.

10 It is further known that other modifications may be made to the present invention, without departing from the scope of the invention.